



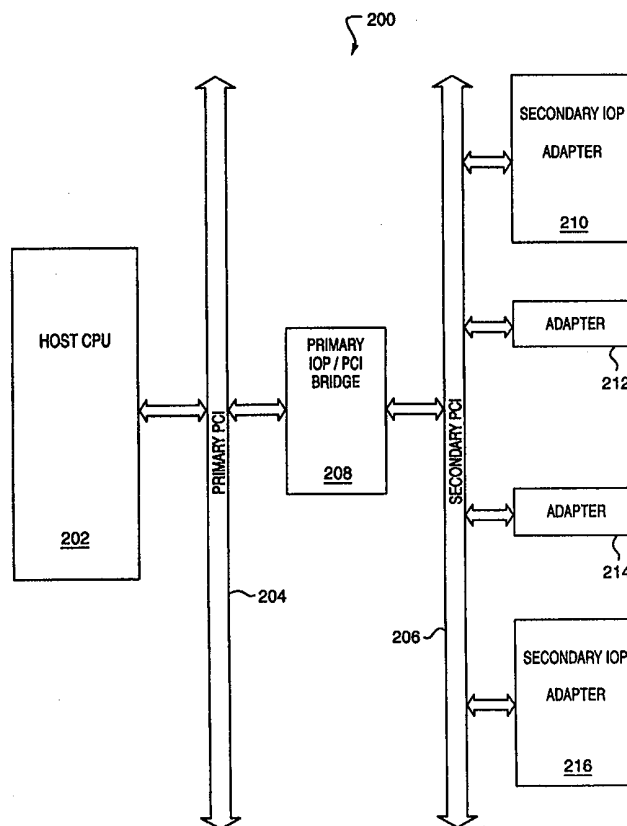
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>G06F 13/40</b>	<b>A3</b>	(11) International Publication Number: <b>WO 99/38086</b> (43) International Publication Date: 29 July 1999 (29.07.99)
<p>(21) International Application Number: PCT/US99/01890</p> <p>(22) International Filing Date: 26 January 1999 (26.01.99)</p> <p>(30) Priority Data: 09/013,818 27 January 1998 (27.01.98) US</p> <p>(71) Applicant: LSI LOGIC CORPORATION [US/US]; 1551 McCarthy Boulevard, Milpitas, CA 95035 (US).</p> <p>(72) Inventors: ODENWALD, Louis, H., Jr.; 6729 Bromley Circle, Wichita, KS 67226 (US). SCHREMMER, Steven, R.; 9252 West 21st Street North #306, Wichita, KS 67205 (US).</p> <p>(74) Agent: BAILEY, Wayne, P.; LSI Logic Corporation, 2001 Danfield Court, Fort Collins, CO 80525 (US).</p>	<p>(81) Designated States: JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 18 November 1999 (18.11.99)</p>	

(54) Title: BUS BRIDGE ARCHITECTURE FOR A DATA PROCESSING SYSTEM

## (57) Abstract

The method and apparatus provides a data processing system (200). The data processing system includes a primary bus (204), a secondary bus (210), and a host processor (202) connected to the primary bus. The data processing system includes a first secondary processor (208) connected to the primary bus and the secondary bus. Additionally, a second secondary processor (210, 216) is connected to the secondary bus. The first secondary processor and the second secondary processor form cascaded processors for input/output functions. Selected functions normally performed by the second secondary processor are performed by the first secondary processor, wherein a division of workload increases performance of the data processing system. This architecture allows shifting of workload down to the secondary bus.



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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/01890

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 G06F13/40

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BORKAR & WILSON: "On the Path to the I20 Architecture" COMPUTER TECHNOLOGY REVIEW., February 1997 (1997-02), page 20,22 XP000680852 LOS ANGELES US	1-8
A	page 20, column 4, paragraph 2 -page 22, column 4, paragraph 4; figures 4,5 ---	9-11
X	WO 97 34234 A (DIAMOND MULTIMEDIA) 18 September 1997 (1997-09-18) page 18, line 8 -page 26, line 31; figures 2-4 --- -/--	1-8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

20 May 1999

Date of mailing of the international search report

30. 09. 1999

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/01890

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>T. THOMPSON: "The Server's Helper: RISC powers Intel's intelligent I/O controller for servers"</p> <p>BYTE., October 1996 (1996-10), pages 67-68, XP000683571</p> <p>ST PETERBOROUGH US</p> <p>page 68, left-hand column, paragraph 2</p> <p>-right-hand column, paragraph 2; figures</p> <p>-----</p>	1-8

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 99/01890

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-11

#### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 99/01890

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-11

An I2O system with an intelligent bus bridge linking primary and secondary buses and having a separate I/O processor on the secondary bus.

2. Claims: 12-24

A bus bridge with message originator identification means.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

### Information on patent family members

International Application No.

CT/US 99/01890

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9734234 A	18-09-1997	CN 1218566 A EP 0895619 A	02-06-1999 10-02-1999
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